

On the Grey Seal (Halichærus gryphus).

By Dr. J. E. GRAY, F.R.S. &c.

Many years ago I was informed that the large seals lived on the west coast of South Wales. I observed them with an opera-glass in St. Bride's Bay, and I was convinced they were the grey seal. I offered a reward for the animal alive or dead, or for its skin and skull, but was never able to obtain one. Several have been shot, but they either escape or sink. This winter I received a note from Mr. Stokes, of Cuffern in Pembrokeshire, informing me that Thomas at St. David's had two young seals. I immediately sent the note to the Secretary of the Zoological Society, stating that the usual St.-David's seal was the grey seal, which I believe has never been in the Gardens, and the Society had better send a person to see the seals and procure them. Neither Mr. Stokes nor I ever received any account of the result; but I am told there are two grey seals from St. David's in the Gardens, which are doubtless those I referred to.

The grey seal was first observed in Ireland by Mr. Ball, who made several figures of it. Now we have specimens from the west coast of Wales; and I believe that it is found in various parts of the Irish Sea and St. George's Channel. I have heard of specimens being seen in the Isle of Man; and I have reason to believe, from parts of skin which I have seen, they occur as far south as the Land's End and Scilly Islands.

I have not been able to procure an animal, or any part of one, from the east coast of Scotland. We have one from the Fern Islands in the British Museum. It is found in the North Sea, and also in the Baltic.

On the Acclimatization and Anatomy of Perichæta diffringens, Baird.

By M. L. VAILLANT.

Dr. Baird was the first, in 1869, to indicate this worm as living in a hothouse in North Wales. A little later I presented several specimens of it to the Philomathic Society*, when the peculiarities connected with the locomotion of this annelid were confirmed. The individuals collected by M. Guinard in the neighbourhood of Montpellier were obtained from M. Fage's hothouses, where they had been introduced in vessels containing Orchidæ sent by M. Mazel from Monsauve (near Anduse), with whom this curious species has also become acclimatized. It is remarkable that both in England and in France it is with Orchidæ that the transportation appears to have been effected. Being persuaded that this circumstance must be very general, I have endeavoured to extend these observations; and last year I requested M. L. Rousseau to ascertain whether this curious animal did not also occur at the Museum. Several horticulturists have also kindly lent me their aid; and almost everywhere my previsions have been realized: and we may now assert that

* Bull. Soc. Philom. tom. vii. p. 25 (1870).

this *Perichæta* is very widely spread, its resemblance to the true *Lumbrici* alone causing it not to be recognized.

According to my observations this worm, whilst seeking moisture and warmth, delights in light and aerated soils. Under conditions of captivity in which the earthworms easily live, *P. diffringens* does not thrive well; in damp moss it survives for a considerable time, but in a wet clay or marly clay soil it dies in a few days. When placed in water, suffocation takes place comparatively quickly. When this annelid is dead the middle part of its body is already decomposed, whilst the two extremities, having retained their normal appearance, are still capable of contracting under the influence of excitants. In *Lumbricus terrestris*, as is well known, decomposition under these circumstances advances with more regularity from behind forwards. When irritated, the animal, like various *Lumbrici*, emits from its dorsal perforations a greenish-yellow liquid, full of Psorospermia, measuring 0.026 by 0.018 millim., and having very granular contents.

Anatomically *P. diffringens* differs but little from *P. cingulata* and *posthuma*, which I described in 1867. The nervous system is constructed on the same plan. Behind the testes, in the midst of the great dorso-ventral vascular trunks, I have found lateral, pyriform, ganglionic inflations, measuring 0.128 by 0.092 millim., situated upon the course of the nerves, which recalls to mind an arrangement well known in some *Hirudineæ*. The nerves which spring from the connectives uniting the ventral ganglia are very distinct, as in *Lumbricus*. In the last four or five segments the ganglia become less distinct, and the two lateral halves of the apparatus tend to separate.

The gizzard presents interiorly a translucent chitinous apparatus, of an opaline white colour, with iridescent reflections, forming a section of an hexagonal pyramid, nearly 4 millims. in height; and this apparatus, singularly enough, does not adhere to the wall of the digestive canal, a fact which in my previous researches I believed (but, as it seems, wrongly) was to be ascribed to the state of preservation of the individuals submitted to my examination. The intestinal part of the digestive cavity, less simple than in *Lumbricus terrestris*, varies in colour in the course of its passage; and in this respect we may distinguish in it three portions: the first, extending to the lateral cæca, already well known in *P. cingulata*, is reddish, as are also these cæca at their adherent portion; the second and the bottom of the cæca are yellowish; and the third portion, which is less inflated than the preceding, is brownish red. The dissepiments which sustain this last appear more distinct.

In this species I have not met with the large gland which, in the species previously studied, unites by its duct with the deferent duct towards its opening; on the other hand, the latter, which is 0.08 millim. in width during its course, becomes inflated into a club at its termination, where its diameter attains 0.48 millim. This dilated portion is recurved in the form of an S; the wall, which is very thick, seems to contain some glandular cells, but is chiefly

composed of contractile fibres. There are four pairs of spermatic reservoirs*, each consisting of a double vesicle, the outer one much larger than the inner, and both furnished with a duct; these ducts unite, to open externally at the intersections of the third, fourth, fifth, sixth, and seventh segments, by orifices which are rendered visible by pale latero-central spots. The two vesicles and their ducts are situated behind each of the dissepiments. These reservoirs contain granular cells, with spermatozoids and Psorospermia of 0.010 by 0.006 millim.; the latter abound especially in the largest vesicles of each pair.

In short, *P. diffringens*, in all the essential parts of its organization, resembles the species which have already been studied, and confirms the views expressed by me in previous memoirs.—*Comptes Rendus*, August 7, 1871, pp. 385–387.

On the Animal of the Glass-rope. By Dr. J. E. GRAY, F.R.S. &c.

Mr. F. Kitton, in Hardwicke's 'Science Gossip' for March 1872, makes some "Remarks on *Palythoa* investing the Glass-rope Sponge," and figures some of the animals growing on the surface of a ray's ova-case, evidently considering that this proves their parasitic nature. He mentions a second case, in which they were growing on a riband frond of some species of Algæ.

I regard both these instances as proving just the contrary. "The Algæ had become entangled with the glass-rope." The egg-case of the ray is very often to be found attached by its elongated ends to the glass-rope. I believe the figure only represents some of the eggs or buds of the polypes growing on its surface, to which they have become accidentally attached; and that they will never come to perfection so as to form a crust or develop the rope-like spicules. My reason for believing this to be the case is that the polypes are isolated; they are of very different sizes, some being very small and others being large; some are crowded one upon the other, so as to deform their shape, very unlike the uniform crust they form on the glass-rope; and I have no doubt of their being incapable, from their position, of developing the usual rope.

Mr. Kitton states "that the examination of the *Palythoa* when found apart from the sponge has enabled him to ascertain the spicules peculiar to it. Figs. 24 & 25 of his previous paper appear to be the only forms of spicula really belonging to the *Palythoa*." He omits to state that these spicules are siliceous, like the other spicules found in the rope and bark of *Hyalonema*, which have not hitherto been found in *Palythoa*; and the two forms he mentions from a polype only differ from those found in other parts of that coral in being thicker and more spinose.

* I think it necessary to indicate that the improper name of *capsuligenous glands* must no longer be employed, or at least referred to D'Udekem, who has formally reverted to the opinion of Leuckart in his well-known work on the genital organs of *Æolosoma* and *Chaetogaster*.